



# **EQT (Chevron Data) 02-13-21**

**Marshall County, WV Chevron**

**Longworth**

**M02H**

**OH-ST01**

**Design: Longworth 2H ST01 As Drilled**

## **Standard Survey Report**

**20 July, 2021**



**EQT**  
Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well M02H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH-ST01		
Design:	Longworth 2H ST01 As Drilled		

**Project** Marshall County, WV Chevron

<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	West Virginia Northern Zone		

**Site** Longworth

<b>Site Position:</b>		<b>Northing:</b>	493,086.404 usft	<b>Latitude:</b>	39.85
<b>From:</b>	Map	<b>Easting:</b>	1,624,022.636 usft	<b>Longitude:</b>	-80.73
<b>Position Uncertainty:</b>	0.000 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.7825 °

**Well** M02H

<b>Well Position</b>	<b>+N-S</b>	0.000 usft	<b>Northing:</b>	493,075.068 usft	<b>Latitude:</b>	39.8472820
	<b>+E-W</b>	0.000 usft	<b>Easting:</b>	1,624,079.796 usft	<b>Longitude:</b>	80.7267298°W
<b>Position Uncertainty</b>		0.000 usft	<b>Wellhead Elevation:</b>	0.000 usft	<b>Ground Level:</b>	1,270.000 usft

**Wellbore** OH-ST01

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	12/10/2019	-8.0500	66.7833	52,254.90000000

**Design** Longworth 2H ST01 As Drilled

**Audit Notes:**

<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.000
<b>Vertical Section:</b>		<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
		0.000	0.000	0.000	309.177

**Survey Program** Date 7/20/2021

From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	585.000	Survey #1 (OH-ST01)	53_SDI_Keeper_WL_NS+C1 SDI_101Ga	- SDI Keep static gyrocompass with con c
0.00	912.000	Survey #2 (OH-ST01)	MWD c	MWD - Standard c
0.00	1,005.000	Survey #3 (OH-ST01)	53_SDI_Keeper_WL_NS+C1 SDI_101Ga	- SDI Keep static gyrocompass with con c
0.00	18,045.000	Survey #4 (OH-ST01)	11_MWD+IFR1+AX+Sag c	A007Mb: IFR dec & axial + sag corrections c

**Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.000	0.000	0.000	0.000	-1,294.000	0.000	0.000	0.000	0.00000	0.00000	0.00000
101.000	0.120	114.990	101.000	-1,193.000	-0.045	0.096	-0.103	0.11881	0.11881	0.00000
126.000	0.330	113.230	126.000	-1,168.000	-0.084	0.186	-0.197	0.84036	0.84000	-7.04000
151.000	0.170	93.150	150.999	-1,143.000	-0.115	0.289	-0.296	0.72022	-0.64000	-80.32000
176.000	0.090	43.650	175.999	-1,118.001	-0.102	0.340	-0.328	0.52348	-0.32000	-197.9999



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Site:	Longworth	North Reference:	True
Well:	M02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH-ST01		
Design:	Longworth 2H ST01 As Drilled		

**Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
201.000	0.140	38.970	200.999	-1,093.001	-0.064	0.372	-0.329	0.20333	0.20000	-18.72000
226.000	0.180	50.530	225.999	-1,068.001	-0.016	0.422	-0.337	0.20484	0.16000	46.24000
251.000	0.300	39.050	250.999	-1,043.001	0.060	0.493	-0.345	0.51475	0.48000	-45.92000
276.000	0.320	25.920	275.999	-1,018.001	0.174	0.565	-0.328	0.29447	0.08000	-52.52000
301.000	0.620	5.380	300.998	-993.002	0.371	0.608	-0.237	1.35779	1.20000	-82.16000
326.000	0.890	16.630	325.996	-968.004	0.692	0.677	-0.087	1.22706	1.08000	45.00000
351.000	0.770	17.520	350.993	-943.007	1.038	0.783	0.049	0.48275	-0.48000	3.56000
376.000	0.670	11.680	375.991	-918.009	1.341	0.863	0.179	0.49566	-0.40000	-23.36000
401.000	0.560	7.580	400.990	-893.010	1.606	0.909	0.310	0.47363	-0.44000	-16.40000
426.000	0.590	0.630	425.988	-868.012	1.855	0.926	0.454	0.30346	0.12000	-27.80000
451.000	0.590	0.360	450.987	-843.013	2.113	0.928	0.615	0.01112	0.00000	-1.08000
476.000	0.560	1.920	475.986	-818.014	2.364	0.933	0.770	0.13535	-0.12000	6.24000
501.000	0.610	16.810	500.984	-793.015	2.613	0.976	0.894	0.63800	0.20000	59.56000
526.000	0.760	19.510	525.983	-768.017	2.897	1.070	1.001	0.61357	0.60000	10.80000
551.000	0.770	25.480	550.980	-743.020	3.205	1.197	1.096	0.32118	0.04000	23.88000
576.000	0.610	38.360	575.979	-718.021	3.461	1.352	1.138	0.88756	-0.64000	51.52000
585.000	0.570	44.630	584.978	-709.022	3.530	1.413	1.135	0.84324	-0.44444	69.66667
631.000	0.920	24.840	630.974	-663.026	4.028	1.729	1.204	0.93362	0.76087	-43.02174
725.000	1.150	58.790	724.960	-569.040	5.202	2.853	1.074	0.68416	0.24468	36.11702
818.000	1.740	129.950	817.936	-476.064	4.779	4.734	-0.651	1.88015	0.63441	76.51613
912.000	2.150	147.270	911.883	-382.117	2.379	6.781	-3.754	0.75766	0.43617	18.42553
1,005.000	1.300	84.500	1,004.847	-289.153	1.013	8.775	-6.162	2.08339	-0.91398	-67.49463
1,061.000	2.980	52.160	1,060.807	-233.193	1.966	10.557	-6.941	3.58202	3.00000	-57.75000
1,154.000	2.480	38.360	1,153.703	-140.297	5.027	13.715	-7.456	0.88430	-0.53763	-14.83871
1,246.000	1.760	7.940	1,245.642	-48.358	7.987	15.145	-6.695	1.42538	-0.78261	-33.06522
1,338.000	2.220	294.900	1,337.599	43.599	10.137	13.724	-4.235	2.60532	0.50000	-79.39131
1,430.000	4.260	271.330	1,429.451	135.451	10.967	8.691	0.191	2.60374	2.21739	-25.61957
1,522.000	5.250	269.650	1,521.133	227.133	11.020	1.065	6.136	1.08657	1.07609	-1.82609
1,615.000	6.710	257.760	1,613.628	319.628	9.842	-8.500	12.807	2.05088	1.56989	-12.78495
1,707.000	7.550	255.200	1,704.916	410.916	7.159	-19.596	19.713	0.97596	0.91304	-2.78261
1,799.000	7.200	255.620	1,796.155	502.155	4.183	-31.025	26.693	0.38492	-0.38043	0.45652
1,892.000	5.660	251.790	1,888.567	594.567	1.303	-41.027	32.627	1.71804	-1.65591	-4.11828
1,984.000	3.090	236.800	1,980.294	686.294	-1.474	-47.413	35.823	3.03436	-2.79348	-16.29348
2,076.000	2.150	223.250	2,072.198	778.198	-4.088	-50.670	36.696	1.21680	-1.02174	-14.72826
2,168.000	1.800	213.440	2,164.143	870.143	-6.551	-52.649	36.674	0.52763	-0.38043	-10.66304
2,199.000	1.830	208.190	2,195.128	901.128	-7.394	-53.151	36.531	0.54485	0.09677	-16.93548
2,271.000	1.920	213.400	2,267.089	973.089	-9.414	-54.358	36.191	0.26760	0.12500	7.23611
2,364.000	1.170	212.630	2,360.055	1,066.055	-11.514	-55.727	35.926	0.80674	-0.80645	-0.82796
2,456.000	1.090	226.790	2,452.037	1,158.037	-12.904	-56.872	35.935	0.31482	-0.08696	15.39130
2,548.000	0.780	218.960	2,544.025	1,250.025	-13.990	-57.903	36.048	0.36369	-0.33696	-8.51087
2,640.000	0.690	193.840	2,636.017	1,342.018	-15.015	-58.429	35.809	0.36034	-0.09783	-27.30435
2,732.000	0.950	200.460	2,728.008	1,434.008	-16.268	-58.829	35.327	0.30032	0.28261	7.19565
2,824.000	1.040	230.300	2,819.995	1,525.995	-17.515	-59.738	35.243	0.56486	0.09783	32.43478



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Wellbore:	OH-ST01		
Design:	Longworth 2H ST01 As Drilled		

Survey

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2,917.000	0.900	226.360	2,912.981	1,618.981	-18.559	-60.916	35.497	0.16666	-0.15054	-4.23656
3,010.000	0.760	222.510	3,005.972	1,711.972	-19.517	-61.861	35.625	0.16196	-0.15054	-4.13979
<b>KOP=3102' MD/ 3098' TVD</b>										
3,102.000	0.200	215.020	3,097.968	1,803.968	-20.099	-62.365	35.648	0.61121	-0.60870	-8.14130
3,195.000	3.670	248.840	3,190.901	1,896.901	-21.306	-65.235	37.110	3.76947	3.73118	36.36559
3,287.000	9.280	248.600	3,282.278	1,988.278	-25.079	-74.895	42.215	6.09788	6.09783	-0.26087
3,380.000	10.230	236.840	3,373.941	2,079.942	-32.333	-88.792	48.405	2.36803	1.02151	-12.64516
3,472.000	11.780	224.520	3,464.259	2,170.259	-43.500	-102.219	51.759	3.05241	1.68478	-13.39130
3,564.000	16.500	226.310	3,553.447	2,259.447	-59.229	-118.259	54.257	5.15180	5.13043	1.94565
3,656.000	19.930	227.670	3,640.824	2,346.824	-78.819	-139.305	58.196	3.75654	3.72826	1.47826
3,749.000	22.190	228.360	3,727.607	2,433.607	-101.164	-164.150	63.340	2.44465	2.43011	0.74194
3,841.000	26.520	228.280	3,811.400	2,517.400	-126.389	-192.478	69.365	4.70666	4.70652	-0.08696
3,933.000	30.510	228.730	3,892.223	2,598.223	-155.474	-225.375	76.493	4.34321	4.33696	0.48913
4,026.000	34.910	230.750	3,970.458	2,676.458	-187.899	-263.747	85.754	4.87402	4.73118	2.17204
4,118.000	39.300	232.630	4,043.815	2,749.815	-222.258	-307.310	97.819	4.92793	4.77174	2.04348
4,210.000	40.140	236.440	4,114.590	2,820.590	-256.341	-355.185	113.400	2.79913	0.91304	4.14130
4,303.000	35.400	234.920	4,188.085	2,894.085	-288.412	-402.236	129.613	5.19382	-5.09677	-1.63441
4,396.000	29.640	234.280	4,266.470	2,972.470	-317.343	-442.984	142.924	6.20451	-6.19355	-0.68817
4,488.000	33.010	238.340	4,345.057	3,051.057	-343.789	-482.800	157.083	4.32045	3.66304	4.41304
4,581.000	38.400	235.620	4,420.553	3,126.553	-373.419	-528.237	173.587	6.04058	5.79570	-2.92473
4,673.000	39.930	234.800	4,491.881	3,197.881	-406.575	-575.948	189.627	1.75570	1.66304	-0.89130
4,766.000	40.310	236.450	4,563.000	3,269.000	-440.405	-625.408	206.597	1.21406	0.40860	1.77419
4,858.000	42.470	236.970	4,632.017	3,338.017	-473.786	-676.255	224.926	2.37737	2.34783	0.56522
4,951.000	40.640	235.390	4,701.610	3,407.610	-508.105	-727.510	242.978	2.26748	-1.96774	-1.69892
5,043.000	38.650	232.620	4,772.453	3,478.453	-542.570	-775.006	258.024	2.89252	-2.16304	-3.01087
5,136.000	36.450	234.830	4,846.184	3,552.184	-576.120	-820.675	272.231	2.77341	-2.36559	2.37634
5,229.000	36.570	237.370	4,920.937	3,626.938	-606.974	-866.593	288.336	1.62998	0.12903	2.73118
5,321.000	38.300	236.440	4,993.987	3,699.987	-637.515	-913.436	305.354	1.97824	1.88043	-1.01087
5,414.000	42.400	234.260	5,064.851	3,770.851	-671.778	-962.925	322.073	4.66197	4.40860	-2.34409
5,507.000	44.430	236.750	5,132.408	3,838.408	-707.947	-1,015.607	340.063	2.85462	2.18280	2.67742
5,599.000	42.910	237.130	5,198.952	3,904.952	-742.603	-1,068.845	359.440	1.67660	-1.65217	0.41304
5,691.000	37.000	233.130	5,269.455	3,975.455	-776.247	-1,117.348	375.786	7.00173	-6.42391	-4.34783
5,783.000	36.580	231.700	5,343.133	4,049.133	-809.848	-1,161.009	388.405	1.03677	-0.45652	-1.55435
5,876.000	39.270	235.100	5,416.494	4,122.494	-843.873	-1,206.910	402.492	3.66185	2.89247	3.65591
5,968.000	34.220	234.190	5,490.191	4,196.191	-875.689	-1,251.799	417.190	5.52080	-5.48913	-0.98913
6,062.000	31.620	233.260	5,569.091	4,275.091	-905.900	-1,292.987	430.035	2.81766	-2.76596	-0.98936
6,154.000	33.890	233.340	5,646.458	4,352.458	-935.644	-1,332.895	442.180	2.46784	2.46739	0.08696
6,246.000	32.940	228.670	5,723.262	4,429.262	-967.483	-1,372.261	452.583	2.97928	-1.03261	-5.07609
6,339.000	37.070	231.660	5,799.428	4,505.428	-1,001.586	-1,413.254	462.817	4.80746	4.44086	3.21505
6,431.000	41.260	236.220	5,870.757	4,576.758	-1,035.676	-1,460.248	477.711	5.52393	4.55435	4.95652
6,523.000	40.190	237.930	5,940.481	4,646.481	-1,068.307	-1,510.620	496.146	1.68016	-1.16304	1.85870
6,567.000	36.730	237.080	5,974.930	4,680.930	-1,083.000	-1,533.702	504.757	7.95474	-7.86364	-1.93182
6,661.000	41.580	242.850	6,047.824	4,753.824	-1,112.537	-1,585.101	525.941	6.44874	5.15957	6.13830





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6,753.000	42.290	250.510	6,116.308	4,822.308	-1,136.811	-1,641.483	554.313	5.61504	0.77174	8.32609
6,846.000	44.610	265.970	6,184.013	4,890.013	-1,149.584	-1,703.741	594.506	11.68022	2.49462	16.62366
6,939.000	47.950	275.460	6,248.356	4,954.356	-1,148.592	-1,770.787	647.107	8.19575	3.59140	10.20430
7,031.000	52.060	280.820	6,307.499	5,013.499	-1,138.523	-1,840.483	707.495	6.31242	4.46739	5.82609
7,124.000	57.060	283.830	6,361.416	5,067.416	-1,122.297	-1,914.455	775.088	5.98721	5.37634	3.23656
7,217.000	60.380	294.950	6,409.808	5,115.808	-1,095.849	-1,989.191	849.731	10.81759	3.56989	11.95699
7,309.000	65.880	296.720	6,451.375	5,157.375	-1,060.074	-2,063.010	929.555	6.21940	5.97826	1.92391
7,402.000	71.510	304.620	6,485.198	5,191.198	-1,015.840	-2,137.371	1,015.143	9.95964	6.05376	8.49462
7,494.000	77.090	311.990	6,510.115	5,216.116	-960.946	-2,206.742	1,103.596	9.80804	6.06522	8.01087
7,587.000	80.990	314.720	6,527.797	5,233.797	-898.272	-2,273.100	1,194.630	5.08801	4.19355	2.93548
Top of Marcellus @ 6516' TVD										
7,660.410	83.449	318.506	6,537.738	5,243.738	-845.423	-2,323.045	1,266.732	6.10983	3.34925	5.15796
7,680.000	84.110	319.510	6,539.861	5,245.861	-830.724	-2,335.819	1,285.920	6.10983	3.37578	5.12274
LP/Deepest Point of Well=7763' MD/ 6544' TVD										
7,763.000	89.483	319.840	6,544.497	5,250.498	-767.567	-2,389.426	1,367.373	6.48529	6.47311	0.39801
7,773.000	90.130	319.880	6,544.531	5,250.531	-759.923	-2,395.872	1,377.200	6.48529	6.47316	0.39649
7,865.000	90.030	322.250	6,544.403	5,250.403	-688.365	-2,453.684	1,467.221	2.57838	-0.10870	2.57609
7,958.000	89.930	321.980	6,544.435	5,250.435	-614.965	-2,510.793	1,557.860	0.30960	-0.10753	-0.29032
8,051.000	90.400	322.600	6,544.167	5,250.167	-541.392	-2,567.678	1,648.434	0.83657	0.50538	0.66667
8,143.000	90.670	322.300	6,543.308	5,249.308	-468.456	-2,623.745	1,737.972	0.43869	0.29348	-0.32609
8,236.000	90.470	322.370	6,542.383	5,248.383	-394.841	-2,680.569	1,828.526	0.22784	-0.21505	0.07527
8,328.000	90.470	320.820	6,541.628	5,247.629	-322.751	-2,737.717	1,918.368	1.68473	0.00000	-1.68478
8,421.000	90.500	321.440	6,540.841	5,246.841	-250.347	-2,796.077	2,009.348	0.66742	0.03226	0.66667
8,514.000	90.640	321.120	6,539.916	5,245.916	-177.791	-2,854.247	2,100.277	0.37556	0.15054	-0.34409
8,607.000	90.670	321.150	6,538.853	5,244.853	-105.383	-2,912.600	2,191.253	0.04562	0.03226	0.03226
8,699.000	90.700	321.490	6,537.753	5,243.753	-33.569	-2,970.093	2,281.188	0.37097	0.03261	0.36957
8,792.000	90.440	321.150	6,536.828	5,242.828	39.028	-3,028.212	2,372.103	0.46022	-0.27957	-0.36559
8,884.000	90.470	320.960	6,536.097	5,242.097	110.579	-3,086.039	2,462.130	0.20907	0.03261	-0.20652
8,977.000	90.500	320.980	6,535.310	5,241.310	182.820	-3,144.602	2,553.164	0.03877	0.03226	0.02151
9,069.000	90.540	321.070	6,534.475	5,240.475	254.340	-3,202.466	2,643.200	0.10705	0.04348	0.09783
9,162.000	90.500	321.130	6,533.631	5,239.631	326.713	-3,260.864	2,734.190	0.07754	-0.04301	0.06452
9,255.000	90.340	321.610	6,532.949	5,238.949	399.362	-3,318.921	2,825.090	0.54403	-0.17204	0.51613
9,347.000	90.470	321.380	6,532.299	5,238.299	471.355	-3,376.197	2,914.970	0.28717	0.14130	-0.25000
9,440.000	90.870	321.460	6,531.212	5,237.212	544.052	-3,434.188	3,005.848	0.43862	0.43011	0.08602
9,533.000	90.440	321.770	6,530.148	5,236.148	616.945	-3,491.932	3,096.660	0.56998	-0.46237	0.33333
9,625.000	90.470	321.300	6,529.418	5,235.418	688.978	-3,549.157	3,186.525	0.51189	0.03261	-0.51087
9,718.000	93.160	323.920	6,526.472	5,232.472	762.817	-3,605.593	3,276.920	4.03654	2.89247	2.81720
9,794.000	94.870	325.810	6,521.150	5,227.150	824.811	-3,649.222	3,349.903	3.34904	2.25000	2.48684
9,887.000	92.950	321.640	6,514.806	5,220.806	899.589	-3,704.106	3,439.689	4.92665	-2.06452	-4.48387
9,979.000	94.770	321.750	6,508.613	5,214.613	971.617	-3,761.001	3,529.295	1.98185	1.97826	0.11957
10,072.000	92.920	320.270	6,502.377	5,208.377	1,043.733	-3,819.380	3,620.107	2.54520	-1.98925	-1.59140
10,165.000	90.840	320.600	6,499.326	5,205.326	1,115.385	-3,878.581	3,711.264	2.26450	-2.23656	0.35484



EQT  
Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well M02H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	QH-ST01		
Design:	Longworth 2H ST01 As Drilled		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,257.000	90.740	321.310	6,498.057	5,204.058	1,186.829	-3,936.529	3,801.318	0.77928	-0.10870	0.77174
10,350.000	89.400	318.670	6,497.944	5,203.944	1,258.053	-3,996.314	3,892.657	3.18339	-1.44086	-2.83871
10,442.000	89.930	320.680	6,498.482	5,204.482	1,328.187	-4,055.845	3,983.110	2.25941	0.57609	2.18478
10,535.000	87.650	320.710	6,500.446	5,206.446	1,400.129	-4,114.739	4,074.211	2.45183	-2.45161	0.03226
10,627.000	88.160	321.100	6,503.809	5,209.809	1,471.482	-4,172.716	4,164.230	0.69768	0.55435	0.42391
10,720.000	88.730	321.050	6,506.332	5,212.333	1,543.806	-4,231.126	4,255.198	0.61526	0.61290	-0.05376
10,812.000	89.360	321.240	6,507.866	5,213.866	1,615.439	-4,288.834	4,345.186	0.71524	0.68478	0.20652
10,905.000	89.060	320.100	6,509.148	5,215.148	1,687.368	-4,347.769	4,436.311	1.26743	-0.32258	-1.22581
10,997.000	89.460	319.350	6,510.336	5,216.336	1,757.553	-4,407.238	4,526.748	0.92385	0.43478	-0.81522
11,090.000	89.630	319.200	6,511.075	5,217.075	1,828.030	-4,467.912	4,618.305	0.24378	0.18280	-0.16129
11,182.000	90.570	319.460	6,510.914	5,216.914	1,897.809	-4,527.868	4,708.863	1.06010	1.02174	0.28261
11,274.000	90.370	319.910	6,510.160	5,216.160	1,967.956	-4,587.388	4,799.317	0.53525	-0.21739	0.48913
11,366.000	90.740	319.520	6,509.268	5,215.269	2,038.134	-4,646.872	4,889.761	0.58432	0.40217	-0.42391
11,459.000	90.330	320.770	6,508.400	5,214.400	2,109.522	-4,706.466	4,981.056	1.41448	-0.44086	1.34409
11,551.000	90.770	320.890	6,507.517	5,213.517	2,180.844	-4,764.573	5,071.156	0.49573	0.47826	0.13043
11,643.000	90.870	321.120	6,506.200	5,212.200	2,252.339	-4,822.458	5,161.193	0.27258	0.10870	0.25000
11,736.000	90.300	321.820	6,505.251	5,211.251	2,325.087	-4,880.387	5,252.055	0.97063	-0.61290	0.75269
11,828.000	90.910	320.820	6,504.279	5,210.279	2,396.902	-4,937.880	5,341.990	1.27317	0.66304	-1.08696
11,921.000	90.640	321.460	6,503.021	5,209.021	2,469.312	-4,996.224	5,432.962	0.74685	-0.29032	0.68817
12,014.000	90.340	320.670	6,502.226	5,208.226	2,541.649	-5,054.666	5,523.963	0.90862	-0.32258	-0.84946
12,106.000	90.640	321.040	6,501.439	5,207.439	2,612.997	-5,112.742	5,614.055	0.51775	0.32609	0.40217
12,198.000	91.140	320.910	6,500.010	5,206.010	2,684.461	-5,170.663	5,704.101	0.56154	0.54348	-0.14130
12,290.000	90.870	321.230	6,498.397	5,204.397	2,756.018	-5,228.464	5,794.112	0.45505	-0.29348	0.34783
12,383.000	90.970	320.680	6,496.903	5,202.903	2,828.237	-5,287.040	5,885.142	0.60102	0.10753	-0.59140
12,475.000	90.910	319.970	6,495.394	5,201.394	2,899.037	-5,345.768	5,975.394	0.77439	-0.06522	-0.77174
12,568.000	91.210	320.320	6,493.674	5,199.674	2,970.418	-5,405.356	6,066.679	0.49563	0.32258	0.37634
12,660.000	91.010	320.190	6,491.891	5,197.891	3,041.143	-5,464.167	6,156.948	0.25927	-0.21739	-0.14130
12,752.000	90.940	320.910	6,490.326	5,196.326	3,112.173	-5,522.616	6,247.128	0.78619	-0.07609	0.78261
12,845.000	91.240	321.600	6,488.557	5,194.557	3,184.693	-5,580.809	6,338.052	0.80890	0.32258	0.74194



**EQT**  
Survey Report

Database:	EDM Definitive	Local Co-ordinate Reference:	Well M02H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	QH-ST01		
Design:	Longworth 2H-ST01 As Drilled		

**Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,937.00 0	90.840	321.230	6,486.887	5,192.887	3,256.596	-5,638.178	6,427.947	0.59222	-0.43478	-0.40217
13,029.00 0	90.740	321.820	6,485.618	5,191.618	3,328.614	-5,695.412	6,517.810	0.65039	-0.10870	0.64130
13,122.00 0	90.870	321.580	6,484.312	5,190.312	3,401.591	-5,753.046	6,608.588	0.29347	0.13978	-0.25806
13,214.00 0	90.470	321.550	6,483.236	5,189.236	3,473.651	-5,810.231	6,698.440	0.43600	-0.43478	-0.03261
13,306.00 0	90.800	321.810	6,482.216	5,188.216	3,545.826	-5,867.272	6,788.253	0.45664	0.35870	0.28261
13,399.00 0	90.370	322.210	6,481.267	5,187.267	3,619.116	-5,924.513	6,878.925	0.63147	-0.46237	0.43011
13,491.00 0	90.600	322.030	6,480.488	5,186.488	3,691.729	-5,981.000	6,968.584	0.31745	0.25000	-0.19565
13,583.00 0	90.570	321.590	6,479.549	5,185.549	3,764.034	-6,037.878	7,058.352	0.47935	-0.03261	-0.47826
13,676.00 0	90.800	321.990	6,478.437	5,184.437	3,837.103	-6,095.398	7,149.101	0.49611	0.24731	0.43011
13,768.00 0	90.230	321.530	6,477.610	5,183.610	3,909.359	-6,152.339	7,238.888	0.79614	-0.61957	-0.50000
13,860.00 0	90.600	321.690	6,476.944	5,182.944	3,981.467	-6,209.471	7,328.728	0.43816	0.40217	0.17391
13,952.00 0	90.540	320.690	6,476.028	5,182.028	4,053.151	-6,267.127	7,418.707	1.08886	-0.06522	-1.08696
14,044.00 0	90.100	319.880	6,475.515	5,181.515	4,123.919	-6,325.911	7,508.982	1.00193	-0.47826	-0.88043
14,137.00 0	90.030	319.740	6,475.409	5,181.409	4,194.962	-6,385.926	7,600.385	0.16831	-0.07527	-0.15054
14,229.00 0	90.100	319.650	6,475.305	5,181.305	4,265.122	-6,445.437	7,690.839	0.12393	0.07609	-0.09783
14,321.00 0	90.030	320.030	6,475.200	5,181.200	4,335.433	-6,504.770	7,781.250	0.41999	-0.07609	0.41304
14,413.00 0	90.300	319.510	6,474.935	5,180.935	4,405.670	-6,564.188	7,871.682	0.63686	0.29348	-0.56522
14,506.00 0	90.910	319.680	6,473.953	5,179.953	4,476.484	-6,624.466	7,963.143	0.68091	0.65591	0.18280
14,598.00 0	90.440	319.840	6,472.870	5,178.870	4,546.707	-6,683.892	8,053.572	0.53966	-0.51087	0.17391
14,691.00 0	90.610	321.220	6,472.017	5,178.017	4,618.494	-6,743.006	8,144.746	1.49503	0.18280	1.48387
14,783.00 0	90.870	320.830	6,470.829	5,176.829	4,690.010	-6,800.868	8,234.779	0.50945	0.28261	-0.42391
14,875.00 0	91.740	322.450	6,468.734	5,174.734	4,762.128	-6,857.946	8,324.584	1.99831	0.94565	1.76087
14,967.00 0	92.120	321.680	6,465.635	5,171.635	4,834.647	-6,914.472	8,414.215	0.93290	0.41304	-0.83696
15,060.00 0	92.310	321.340	6,462.041	5,168.041	4,907.386	-6,972.309	8,505.001	0.41856	0.20430	-0.36559
15,152.00 0	92.050	320.470	6,458.541	5,164.541	4,978.734	-7,030.283	8,595.014	0.98632	-0.28261	-0.94565





**EQT**  
Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well M02H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH-ST01		
Design:	Longworth 2H ST01 As Drilled		

Survey											
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,244.00	91.980	320.560	6,455.306	5,161.307	5,049.695	-7,088.747	8,685.163	0.12388	-0.07609	0.09783	
0											
15,337.00	91.140	320.120	6,452.775	5,158.775	5,121.264	-7,148.080	8,776.369	1.01955	-0.90323	-0.47312	
0											
15,429.00	90.770	321.040	6,451.241	5,157.241	5,192.324	-7,206.491	8,866.539	1.07771	-0.40217	1.00000	
0											
15,521.00	91.010	320.230	6,449.812	5,155.812	5,263.442	-7,264.835	8,956.694	0.91817	0.26087	-0.88043	
0											
15,614.00	91.280	320.770	6,447.954	5,153.954	5,335.188	-7,323.979	9,047.866	0.64908	0.29032	0.58065	
0											
15,706.00	91.440	320.540	6,445.770	5,151.770	5,406.316	-7,382.289	9,138.000	0.30448	0.17391	-0.25000	
0											
15,799.00	90.700	320.400	6,444.034	5,150.034	5,478.033	-7,441.471	9,229.183	0.80981	-0.79570	-0.15054	
0											
15,891.00	89.930	320.360	6,443.528	5,149.528	5,548.898	-7,500.137	9,319.428	0.83809	-0.83696	-0.04348	
0											
15,983.00	89.560	321.780	6,443.937	5,149.937	5,620.463	-7,557.945	9,409.450	1.59500	-0.40217	1.54348	
0											
16,076.00	89.190	321.800	6,444.952	5,150.952	5,693.533	-7,615.467	9,500.201	0.39843	-0.39785	0.02151	
0											
16,170.00	89.830	321.750	6,445.756	5,151.756	5,767.376	-7,673.627	9,591.934	0.68293	0.68085	-0.05319	
0											
16,262.00	90.130	321.430	6,445.788	5,151.788	5,839.465	-7,730.785	9,681.783	0.47678	0.32609	-0.34783	
0											
16,354.00	90.030	321.520	6,445.659	5,151.659	5,911.440	-7,788.088	9,771.672	0.14623	-0.10870	0.09783	
0											
16,447.00	90.030	321.160	6,445.611	5,151.611	5,984.060	-7,846.184	9,862.584	0.38710	0.00000	-0.38710	
0											
16,539.00	91.170	321.470	6,444.647	5,150.647	6,055.870	-7,903.684	9,952.521	1.28412	1.23913	0.33696	
0											
16,632.00	91.240	320.890	6,442.691	5,148.691	6,128.312	-7,961.970	10,043.468	0.62804	0.07527	-0.62366	
0											
16,724.00	91.010	320.360	6,440.885	5,146.885	6,199.415	-8,020.323	10,133.620	0.62789	-0.25000	-0.57609	
0											
16,816.00	91.240	320.080	6,439.079	5,145.079	6,270.103	-8,079.177	10,223.899	0.39382	0.25000	-0.30435	
0											
16,908.00	90.970	319.370	6,437.305	5,143.305	6,340.281	-8,138.639	10,314.327	0.82552	-0.29348	-0.77174	
0											
17,001.00	90.640	317.840	6,435.998	5,141.998	6,410.038	-8,200.127	10,406.059	1.68283	-0.35484	-1.64516	
0											
17,093.00	90.770	319.330	6,434.866	5,140.866	6,479.025	-8,260.980	10,496.812	1.62560	0.14130	1.61957	
0											
17,185.00	91.010	320.670	6,433.437	5,139.437	6,549.491	-8,320.108	10,587.164	1.47952	0.26087	1.45652	
0											
17,278.00	91.280	321.420	6,431.578	5,137.578	6,621.796	-8,378.565	10,678.157	0.85697	0.29032	0.80645	
0											
17,370.00	90.600	320.920	6,430.069	5,136.069	6,693.455	-8,436.242	10,768.136	0.91739	-0.73913	-0.54348	
0											
17,463.00	90.700	321.730	6,429.014	5,135.014	6,766.055	-8,494.354	10,859.047	0.87752	0.10753	0.87097	
0											





**EQT**  
Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well M02H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH-ST01		
Design:	Longworth 2H ST01 As Drilled		

Survey											
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
17,555.00 0	90.230	321.610	6,428.267	5,134.267	6,838.222	-8,551.409	10,948.86 6	0.52726	-0.51087	-0.13043	
17,647.00 0	90.500	320.990	6,427.681	5,133.681	6,910.020	-8,608.930	11,038.812	0.73503	0.29348	-0.67391	
17,740.00 0	90.540	320.890	6,426.837	5,132.837	6,982.230	-8,667.530	11,129.855	0.11581	0.04301	-0.10753	
17,832.00 0	90.610	319.530	6,425.914	5,131.914	7,052.917	-8,726.404	11,220.148	1.48014	0.07609	-1.47826	
17,924.00 0	90.870	321.680	6,424.726	5,130.726	7,124.004	-8,784.784	11,310.312	2.35379	0.28261	2.33696	
Final Survey=18023' MD/ 6423' TVD											
18,023.00 0	90.570	322.420	6,423.482	5,129.482	7,202.063	-8,845.661	11,406.815	0.80651	-0.30303	0.74747	
Projection to TD=18045' MD/ 6423' TVD											
18,045.00 0	90.570	322.420	6,423.263	5,129.263	7,219.497	-8,859.078	11,428.229	0.00000	0.00000	0.00000	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (-20.099)	+E/-W (-62.365)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Longworth 2H KOP - hit/miss target - Shape - actual wellpath hits target center - Point	0.000	0.000	3,097.96 8	-20.099	-62.365	493,055.823	1,624,017.162	39.8472269	80.7269520°W	
Longworth 2H BHL - actual wellpath hits target center - Point	0.000	0.000	6,423.26 3	7,219.497	-8,859.078	500,414.861	1,615,320.124	39.8670975	80.7582915°W	
Longworth 2H LP - actual wellpath hits target center - Point	0.000	0.000	6,544.49 7	-767.567	-2,389.426	492,340.199	1,621,680.113	39.8451745	80.7352398°W	

Formations				
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip Direction (°)
7,660.410	6,515.600	Top of Marcellus@6516' TVD		-1.5000



**EQT**  
Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well M02H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH-ST01		
Design:	Longworth 2H ST01 As Drilled		

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,102.000	3,097.968	-20.099	-62.365	KOP=3102' MD/ 3098' TVD
7,763.000	6,544.497	-767.567	-2,389.426	LP/Deepest Point of Well=7763' MD/ 6544' TVD
18,023.000	6,423.482	7,202.063	-8,845.661	Final Survey=18023' MD/ 6423' TVD
18,045.000	6,423.263	7,219.497	-8,859.078	Projection to TD=18045' MD/ 6423' TVD

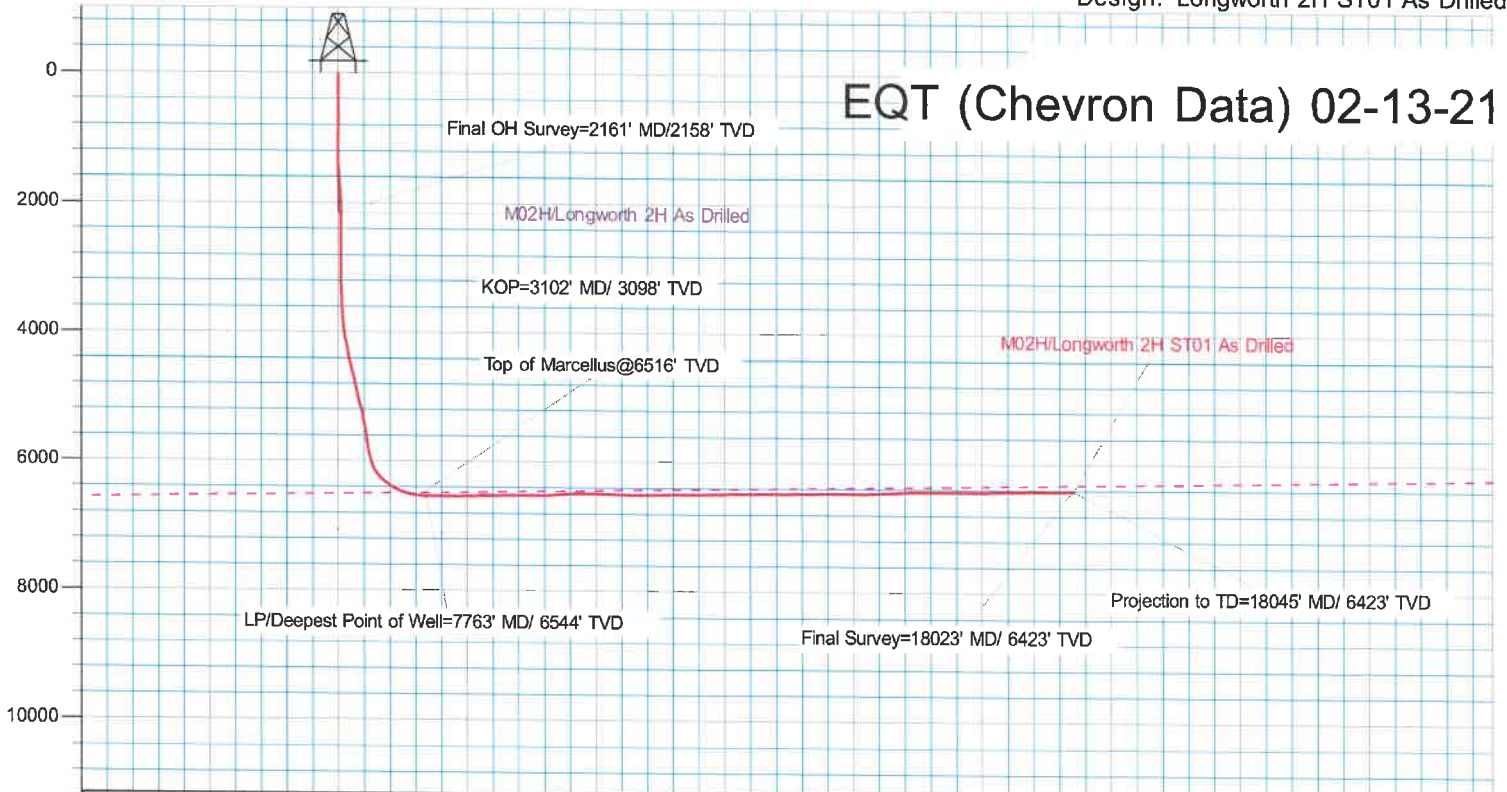
Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



KB Elevation= Air RKB @ 1294.000ust (Highlands 9)  
 Ground Elevation= 1270.000  
 All measurements were taken from KB Elevation

Site: Longworth  
 Well: M02H  
 Wellbore: OH-ST01  
 Design: Longworth 2H ST01 As Drilled

# EQT (Chevron Data) 02-13-21



Surface Location: M02H

		Ground Level: 1270.000					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot	
0.000	0.000	493075.069	1624079.796	39.8472820	80.7267299°W		

## DESIGN TARGET DETAILS

Name	TVD	Northing	Easting	Latitude	Longitude
Longworth 2H KOP	3097.968	493055.824	1624017.162	39.8472268	80.7269520°W
Longworth 2H BHL	6423.263	500414.860	1615320.123	39.8670975	80.7582915°W
Longworth 2H LP	6544.498	492340.200	1621680.113	39.8451745	80.7352398°W

